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Subst	Itute for form 1449/PTO	Complete if Known		
0050		Application Number	TBA 10619648	
INI	CODMATION DISCLOSURE	Filing Date	July 14, 2003	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	First Named Inventor	Steven R. HETZLER		
51		Art Unit	TBA	
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Shoot	1 4	Attorney Docket Number	APC9 2003 0040 US1	

			U. S. PATENT	DOCUMENTS	
Examiner Initials*	Cita No.1	Document Number  Number-Kind Code <sup>3 (1</sup>	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
Del	1	<sup>US-</sup> 5,134,619	07-28-1992	Henson et al.	
ell	2	<sup>US-</sup> 5,148,432	09-15-1992	Gordon et al.	
20	3	US- 5,257,391	10-26-1993	DuLac et al.	
all	4	<sup>US-</sup> 5,301,297	04-05-1994	Menon et al.	
(Q)	5	US- 5,398,253	03-14-1995	Gordon	
(ll	6	<sup>US-</sup> 5,506,977	04-09-1996	Jones	
101	7	US- 5,579,475	11-26-1996	Blaum et al.	
700	8	US- 5,835,938 `	11-10-1998	Yamamoto et al.	
108	9	<sup>US-</sup> 5,848,229	12-08-1998	Morita	
17/2	10	<sup>US-</sup> 5,937,428	08-10-1999	Jantz	
100	11	us- 6,070,249	05-30-2000	Lee	
POL	12	<sup>US-</sup> 6,138,125	10-24-2000	DeMoss	
200	13	US- 6,154,853	11-28-2000	Kedem	
all	14	US- 6,161,165	12-12-2000	Solomon et al.	
000	15	US- 6,269,453 B1	07-31-2001	Krantz	
001	16	us- 6,275,898 B1	08-14-2001	DeKoning	
7009	17	<sup>US-</sup> 6,279,138 B1	08-21-2001	Jadav et al.	
108	18	US- 6,353,895 B1	03-05-2002	Stephenson	
THE	19	US- 6,530,004 B1	03-04-2003	King et al.	

Cite No.	Foreign Patent Document	Publication Date	Name of Patentee or Applicant of Cited Document	Peges, Columns, Lines, Where Relevant Passages	
	Country Code <sup>3</sup> "Number <sup>4</sup> "Kind Code <sup>3</sup> (# known)	MM-DD-YYYY		Or Relevant Figures Appear	
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	INIE	ODMAT	ION DISC	COLIDE	Filing Date	July 14, 20		
	INFORMATION DISCLOSURE		First Named Inventor	Steven R.	HETZLER			
	STATEMENT BY APPLICANT		PLICANT	Art Unit	TBA			
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	Sheet	2	of	4	Attorney Docket Number	ARC9-200	)3-0040-US1	

				DOCUMENTS	
Examiner Initials*	Citto No.1	Document Number  Number-Kind Code <sup>2 (7 Incomp</sup>	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Rigures Appear
lle	20	<sup>US-</sup> 2002/0035667 A1	03-21-2002	Bruning, III et al.	
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		FOREIGN	PATENT DOCU	MENTS		
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Superfind	Substitute for form 1449/PTO			Complete if Known		
				Application Number	JBA- 10619648	
INFO	DRMATIO	N DIS	CLOSURE	Filing Date	July 14, 2003	
STATEMENT BY APPLICANT				First Named Inventor	Steven R. HETZLER	
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	(Use as many shorts as necessary)			Examiner Name	TBA	
Sheet	3	ď	4	Attorney Docket Number	ARC9-2003-0040-US1	

		NON PATENT LITERATURE DOCUMENTS	
Examiner initials*	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
III.	21	G.A. ALVAREZ et al., Tolerating Multiple Failures in RAID Architectures with Optimal Storage and Uniform Declustering, Computer Architecture News (USA), V. 25, #2, pp. 62-72, May 1972.	
PP	22	V. BOHOSSIAN et al., Computing in the RAIN: A Reliable Array of Independent Nodes, pp. 1-20, September 24, 1999.	
Ol	23	P.M. CHEN et al., RAID: High-Performance, Reliable Secondary Storage, ACM Computing Surveys, Vol. 26, No. 2, pp. 146-185, June 1994.	
lll	24	M. HOLLAND et al., Parity Declustering for Continuous Operation in Redundant Disk Arrays, ACM 0-89791-535-6/92/0010/0023, pp. 23-35, October 1992.	
ell	25	N.K. OUCHI, Two-Level DASD Failure Recovery Method, IBM Technical Disclosure Bulletin, Vol. 36, No. 03, pp. 187-190, March 1993.	
lle	26	D.A. Patterson et al., A Case for Redundant Arrays of Inexpensive Disks (RAID), ACM 0-89791-268-3/88/0006/0109 1998.	
Ill	27	J.S. PLANK, A Tutorial on Reed-Sciomon Coding for Fault-Tolerance in RAID-like Systems, pp. 1-19, February 19, 1999.	
elle	28	E.J. SCHWABE et al., Evaluating Approximately Balanced Parity-Declustered Data Layouts for Disk Arrays, ACM 0-89791-813-4/96/05, pp. 41-54, 1996.	
(QL)	29	E.J. SCHWABE et al., Flexible Usage of Parity Storage Space in Disk Arrays, ACM 0-89791-809-6/96/06, pp. 99-108, 1996.	
Ole	30	L. Xu et al., X-Code: MDS Array Codes with Optimal Encoding, IEEE Trans. On Information Theory, Vol. 45, No. 1, pp. 272-276, January 1999.	

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Examiner Signature	JULIA	Date Considered	5	19	06

\*EXAMINER: Initial X-reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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			•	Application Number	TEAT 10619648	
INFO	DRMATION	DIS	CLOSURE	Filing Date	July 14, 2003	
STATEMENT BY APPLICANT				First Named Inventor	Steven R. HETZLER	
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				Examiner Name	TBA	
Sheet	4	ď	4	Attorney Docket Number	ARC9-2003-0040-US1	

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the Item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
Qle	31	M. Blaum et al., *MDS Array Codes with independent Parity Symbols,* IEEE Trans. on Information Theory, Vol.IT-42, pp. 529 542, March 1986.	
Oll	32	M. Blaum et al., "The EVENODD Code and its Generalization," High Performance Mass Storage and Parallel I/O: Technologies and Applications, edited by H. Jin et al., IEEE & Wiley Press, New York, Chapter 14, pp. 187 208, 2001.	
, QQQ	. 33	M. Blaum et al., "EVENODD: An Efficient Scheme For Tolerating Double Disk Failures in A RAID Architecture," IEEE Trans. on Computers, Vol. 44, No. 2, pp. 192-202, Feb. 1995.	
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